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NEWS 4 JAN 27 A new search aid, the Company Name Thesaurus, available in CA/CAplus  
NEWS 5 FEB 05 German (DE) application and patent publication number format changes  
NEWS 6 MAR 03 MEDLINE and LMEDLINE reloaded  
NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded  
NEWS 8 MAR 03 FRANCEPAT now available on STN  
NEWS 9 MAR 29 Pharmaceutical Substances (PS) now available on STN  
NEWS 10 MAR 29 WPIFV now available on STN  
NEWS 11 MAR 29 No connect hour charges in WPIFV until May 1, 2004  
NEWS 12 MAR 29 New monthly current-awareness alert (SDI) frequency in RAPRA  
NEWS 13 APR 26 PROMT: New display field available  
NEWS 14 APR 26 IFIPAT/IFIUDB/IFICDB: New super search and display field available  
NEWS 15 APR 26 LITALERT now available on STN  
NEWS 16 APR 27 NLDB: New search and display fields available

NEWS EXPRESS MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 APRIL 2004

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=> FIL REGISTRY

09889106

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
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FILE 'REGISTRY' ENTERED AT 16:03:14 ON 06 MAY 2004  
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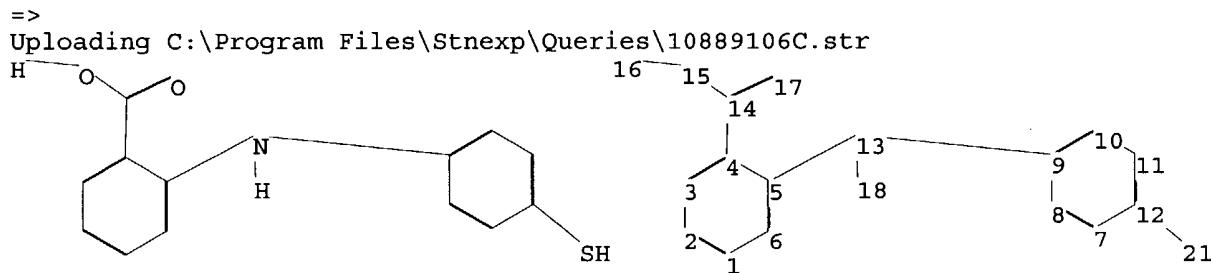
STRUCTURE FILE UPDATES: 5 MAY 2004 HIGHEST RN 680179-46-8  
 DICTIONARY FILE UPDATES: 5 MAY 2004 HIGHEST RN 680179-46-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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<http://www.cas.org/ONLINE/DBSS/registryss.html>



chain nodes :  
 13 14 15 16 17 18 21  
 ring nodes :  
 1 2 3 4 5 6 7 8 9 10 11 12  
 chain bonds :  
 4-14 5-13 9-13 12-21 13-18 14-15 14-17 15-16  
 ring bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12  
 exact/norm bonds :  
 5-13 9-13 12-21  
 exact bonds :  
 4-14 13-18 15-16  
 normalized bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 14-15 14-17  
 isolated ring systems :  
 containing 1 : 7 :

G1:Ak,S

Match level :

09889106

Page 3 16:08 <golam shameem>

05/06/2004

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS  
21:CLASS

L1 STRUCTURE UPLOADED

=> S L1  
SAMPLE SEARCH INITIATED 16:03:30 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 25 TO ITERATE

100.0% PROCESSED 25 ITERATIONS 1 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 200 TO 800  
PROJECTED ANSWERS: 1 TO 80

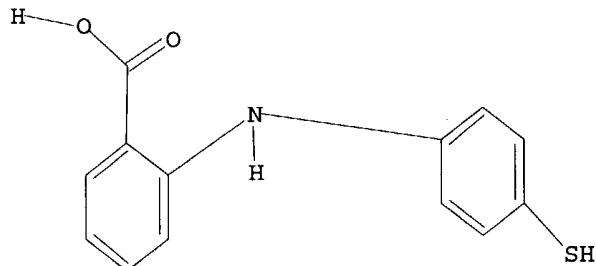
L2 1 SEA SSS SAM L1

=> S L1 SSS FULL  
FULL SEARCH INITIATED 16:03:39 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 380 TO ITERATE

100.0% PROCESSED 380 ITERATIONS 9 ANSWERS  
SEARCH TIME: 00.00.01

L3 9 SEA SSS FUL L1

=> D L1  
L1 HAS NO ANSWERS  
L1 STR



G1 Ak,S

Structure attributes must be viewed using STN Express query preparation.

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	155.42	155.63

FILE 'CAPLUS' ENTERED AT 16:03:50 ON 06 MAY 2004  
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FILE COVERS 1907 - 6 May 2004 VOL 140 ISS 19  
 FILE LAST UPDATED: 5 May 2004 (20040505/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> S L3  
 L4 12 L3  
 => S L4 AND <PY=1999  
 MISSING TERM 'AND <PY=1999'  
 The search profile that was entered contains a logical operator followed immediately by another operator.

=> S L4 AND PY<=1999  
 19722525 PY<=1999  
 L5 10 L4 AND PY<=1999

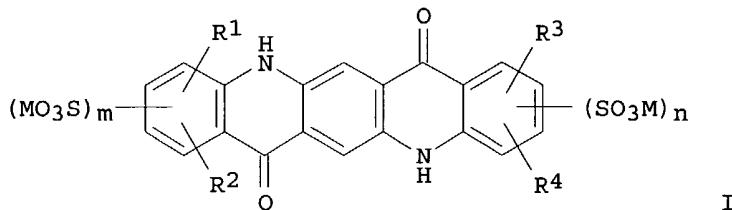
=> d 15 ibib abs hitstr tot

L5 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1998:640306 CAPLUS  
 DOCUMENT NUMBER: 129:261735  
 TITLE: Water-soluble quinacridone dyes and their use  
 INVENTOR(S): Etzbach, Karl-Heinz; Kranz, Carolin; Sens, Rudiger  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: PCT Int. Appl., 19 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9841582	A1	19980924	WO 1998-EP1353	19980309 <--
W: JP, US RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19711443	A1	19980924	DE 1997-19711443	19970319 <--
EP 970149	A1	20000112	EP 1998-913688	19980309
EP 970149	B1	20020828		
R: DE, FR, GB, SE, FI				
JP 2001518129	T2	20011009	JP 1998-540088	19980309
US 6152968	A	20001128	US 1999-380615	19990917
PRIORITY APPLN. INFO.:			DE 1997-19711443 A	19970319

OTHER SOURCE(S) :  
GI

MARPAT 129:261735

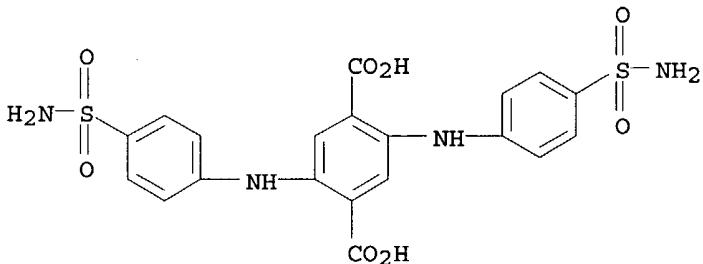


AB Water-soluble quinacridones (I; M = Li, K, Na, ammonium; R1, R2, R3, R4 = H, C1-8-alkyl, C1-8-alkoxy, carboxyl, C1-4-alkoxycarbonyl, sulfamoyl, mono- or di-(C1-4)-alkylsulfamoyl, carbamoyl, mono- or di-(C1-4)-alkylcarbamoyl, unsubstituted or substituted mono- or diphenylsulfamoyl, unsubstituted or substituted mono- or diphenylcarbamoyl, halogen, nitro or cyano; m, n = 0-2; sum n + m ≥ 1) and their mixts. are used to dye and print natural and synthetic fiber materials. I may also be used in bulk dyeing of paper and in ink-jet inks and form stable colorant mixts. and wet-fast prints. In an example, 2,5-bis(4-sulfamoylanilino)terephthalic acid was cyclized to 2,9-quinacridonedisulfonic acid, which was obtained in the form of its diammonium salt (λ<sub>max</sub> 502, 532 nm).

IT 207793-48-4, 2,5-Bis(4-sulfamoylanilino)terephthalic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; water-soluble quinacridone dyes for paper and ink-jet inks)

RN 207793-48-4 CAPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-bis[[4-(aminosulfonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1998:331458 CAPLUS  
DOCUMENT NUMBER: 129:17060  
TITLE: Incorporation of sulfonated precursors during quinacridone preparation  
INVENTOR(S): Badejo, Ibraheem T.; Britanak, John F.; Rice, Daphne J.  
PATENT ASSIGNEE(S): Bayer Corp., USA  
SOURCE: U.S., 12 pp.

CODEN: USXXAM

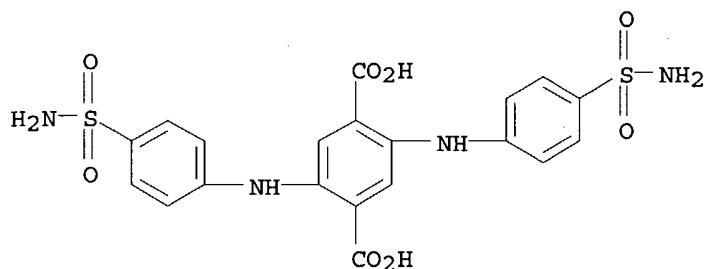
DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5755873	A	19980526	US 1996-748742	19961118 <--
CA 2219294	AA	19980518	CA 1997-2219294	19971024 <--
EP 842987	A2	19980520	EP 1997-119395	19971106 <--
EP 842987	A3	19980805		
EP 842987	B1	20020904		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 10158536	A2	19980616	JP 1997-327209	19971113 <--

PRIORITY APPLN. INFO.: US 1996-748742 A 19961118  
 OTHER SOURCE(S): CASREACT 129:17060; MARPAT 129:17060

AB The first step for preparing quinacridone pigments includes heating a reaction mixture comprising (i) a 2,5-dianilinoterephthalic acid, a 2,5-dianilino-3,6-dihydroterephthalic acid, or a 2,5-dianilino-3,6-dioxo-1,4-cyclohexadiene-1,4-dicarboxylic acid 100, (ii) one or more sulfo- or sulfamoyl-containing derivs. of 2,5-dianilinoterephthalic acid, 2,5-dianilino-3,6-dihydroterephthalic acid, and/or 2,5-dianilino-3,6-dioxo-1,4-cyclohexadiene-1,4-dicarboxylic acid 0.1-15, and (iii) a dehydrating agent 3-20 parts, with the proviso that if either component (i) or component (ii) is a 2,5-dianilino-3,6-dihydroterephthalic acid or derivative thereof, then this step addnl. comprises an oxidation stage. In the second step the reaction mixture from the first step is drowned with a liquid in which the quinacridone pigment is substantially insol. The final step consists of isolating the pigment. The presence of the sulfonated dicarboxylic acid in the ring closure step provides quinacridone pigments having deeper, brighter masstones and improved transparency and rheol. properties. Examples were given for the preparation of quinacridone, 2,9-dimethylquinacridone, and gamma-quinacridone, using polyphosphoric acid cyclization catalyst and 2,5-bis(4-sulfamoylanilino)terephthalic acid, 2,5-bis[4-(3,4-dimethyl-5-isoxazolylsulfamoyl)anilino]terephthalic acid, 2,5-bis[4-(diethylsulfamoyl)anilino]terephthalic acid, or di-Me 2,5-bis[4-(3-methoxypropylsulfamoyl)anilino]-1,4-cyclohexadiene-1,4-dicarboxylate.

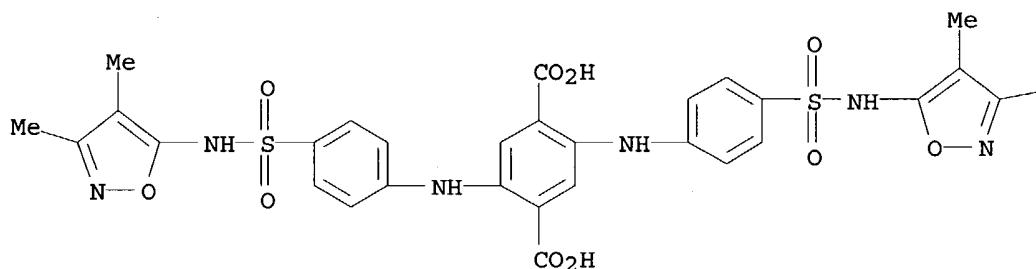
IT 207793-48-4P, 2,5-Bis(4-sulfamoylanilino)terephthalic acid  
 207793-52-0P, 2,5-Bis[4-(3,4-dimethyl-5-isoxazolylsulfamoyl)anilino]terephthalic acid  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (preparation of quinacridone pigments in presence of sulfonated precursors)  
 RN 207793-48-4 CAPLUS  
 CN 1,4-Benzenedicarboxylic acid, 2,5-bis[[4-(aminosulfonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 207793-52-0 CAPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-bis[[4-[[3,4-dimethyl-5-isoxazolyl]amino]sulfonyl]phenyl]amino]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— Me

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:580482 CAPLUS

DOCUMENT NUMBER: 119:180482

TITLE: Synthesis of N-phenylanthranilic acid using water as solvent

AUTHOR(S): Pellon, Rolando F.; Carrasco, Ramon; Rodes, Lorenzo

CORPORATE SOURCE: Cent. Quim. Farm., Havana, Cuba

SOURCE: Synthetic Communications (1993), 23(10),

1447-53

CODEN: SYNCV; ISSN: 0039-7911

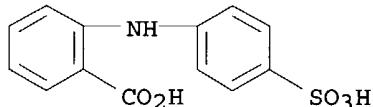
DOCUMENT TYPE: Journal

LANGUAGE: English

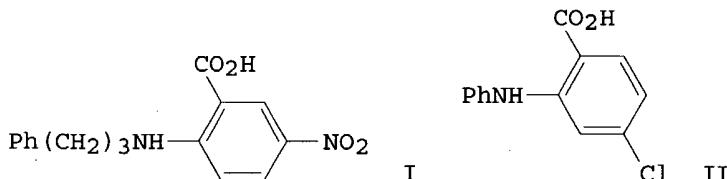
OTHER SOURCE(S): CASREACT 119:180482

AB A study of some parameters which influence the Ullmann-Goldberg condensation for the synthesis of N-phenylanthranilic acids was done, showing that these acids can be obtained efficiently using water as the solvent. Thus, 2-ClC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H was treated with RC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> (R = H, 4-Me, 3-O<sub>2</sub>N, 3-Cl, 4-H<sub>2</sub>N, 4-MeO, 4-HO<sub>3</sub>S) in refluxing H<sub>2</sub>O in the presence of

IT powdered Cu to give 9-89% 2-(RC<sub>6</sub>H<sub>4</sub>NH)C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H.  
**26119-52-8P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 26119-52-8 CAPLUS  
 CN Benzoic acid, 2-[(4-sulfophenyl)amino]- (9CI) (CA INDEX NAME)



L5 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1987:489293 CAPLUS  
 DOCUMENT NUMBER: 107:89293  
 TITLE: Chloride-channel blockers in the thick ascending limb  
 of the loop of Henle. Structure-activity relationship  
 Wangemann, P.; Wittner, M.; Di Stefano, A.; Englert,  
 H. C.; Lang, H. J.; Schlatter, E.; Greger, R.  
 Max-Planck-Inst. Biophys., Frankfurt/Main, D-6000,  
 Fed. Rep. Ger.  
 SOURCE: Pfluegers Archiv (1986), 407(Suppl. 2),  
 S128-S141  
 CODEN: PFLABK; ISSN: 0031-6768  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB On the basis of previous findings with diphenylamine-2-carboxylate a search for compds. which possess an even higher affinity for the Cl<sup>-</sup>-channels in the basolateral membrane of the thick ascending limb of the loop of Henle has been conducted. To quantify the inhibitory potency, measurements of the equivalent short circuit current, corresponding to the secondary active transport of Cl<sup>-</sup> and measurements of the voltage across the basolateral membrane have been performed. A survey of 219 compds. reveals that relatively simple modifications in the structure of diphenylamine-2-carboxylate led to very potent blockers such as 5-nitro-2-(3-phenylpropylamino)benzoate (I) which inhibits the short circuit current half maximally (IC<sub>50</sub>) at 8.10<sup>-8</sup> mol/L. Structure activity studies suggest that these Cl<sup>-</sup> channel blockers possess several sites of interaction: The neg. charged carboxylate group, the secondary amine group which probably carries a pos. partial charge, and for the very potent agents (e.g. I and 5-chlorodiphenylamine-2-carboxylic acid (II)) an addnl. neg. partial charge at the resp. -Cl or -NO<sub>2</sub> substituent. Finally, also

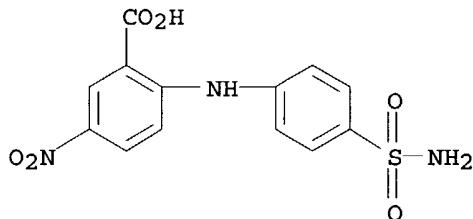
an apolar interaction with an cycloalkyl or cycloaryl residue seems to be required, and this site of interaction has a defined spacing from the secondary amino N.

IT 107946-91-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and chloride channel blocking activity of, structure in relation to)

RN 107946-91-8 CAPLUS

CN Benzoic acid, 2-[[4-(aminosulfonyl)phenyl]amino]-5-nitro- (9CI) (CA INDEX NAME)



L5 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:32168 CAPLUS

DOCUMENT NUMBER: 94:32168

TITLE: Chromium complexes of monozo dyes

PATENT ASSIGNEE(S): Colour-Chem Ltd., India

SOURCE: Indian, 16 pp.

CODEN: INXXAP

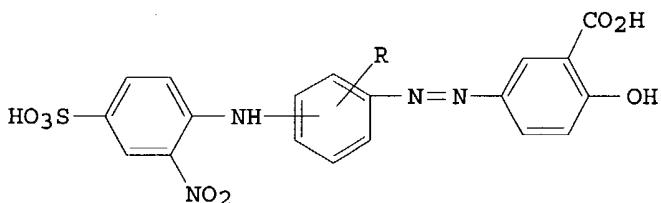
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

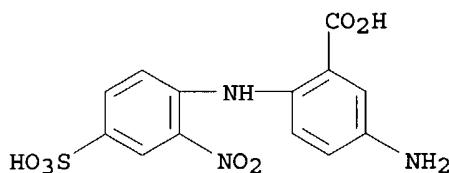
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 147672	A	19800524	IN 1977-BO352	19771220 <--
PRIORITY APPLN. INFO.:			IN 1977-BO352	19771220
GI				



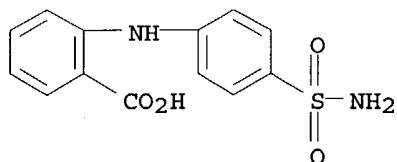
AB Chromium complexes of azo dyes (I; R = H, Cl, Br, Me, Et, MeO, EtO, SO3H, CO2H) are prepared and are used to dye leather fast brown shades. Thus, 4-[(2-nitro-4-sulfophenyl)amino]aniline [135-11-5] was diazotized, coupled with salicylic acid [69-72-7], giving I (R = H, p-substituted) (II) [76091-85-5], which was treated with K chromic sulfate to give Cr complex of II, dyeing leather a fast, dark orange-brown shade. Several addnl. I were similarly prepared

IT 76091-83-3

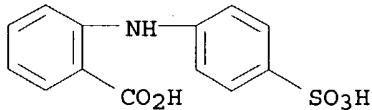
RL: USES (Uses)  
 (coupling of diazotized, with salicylic acid)  
 RN 76091-83-3 CAPLUS  
 CN Benzoic acid, 5-amino-2-[(2-nitro-4-sulfophenyl)amino]- (9CI) (CA INDEX NAME)



L5 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1973:42982 CAPLUS  
 DOCUMENT NUMBER: 78:42982  
 TITLE: Syntheses of flufenamic acid metabolites I and II and other N-arylanthranilic acids  
 AUTHOR(S): Bowman, R. E.; Brunt, K. D.; Godfrey, K. E.; Kruszynska, L.; Reynolds, A. A.; Thrift, R. I.; Waite, D.; Williamson, W. R. N.  
 CORPORATE SOURCE: Dep. Chem., Parke, Davis and Co., Hounslow, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1973), (1), 1-4  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB (Addnl. data considered in abstracting and indexing are available from a source cited in the original document.) 2,5-Cl(HO)C6H3CO2Et reacted with PhCH2Cl-NaOEt-EtOH to give, after hydrolysis, 2,5-Cl(PhCH2O)C6H3CO2H, which was condensed with n-F3CC6H4NH2 in the presence of Cu2+ to give 5-(benzyloxy)-N-( $\alpha$ , $\alpha$ , $\alpha$ -trifluoro-m-tolyl) anthranilic acid (I, R = PhCH2O, R1 = H). Hydrogenolysis gave I (R = OH, R1 = H). 2,5-Cl(O2N)C6H3CF3 was similarly converted into 2,5-PhCH2O(O2N)C6H3CF2; reduction of the NO2 group and condensation with 2-BrC6H4CO2K gave N-[4-(benzyloxy)- $\alpha$ , $\alpha$ , $\alpha$ -trifluoro-m-tolyl] anthranilic acid (I, R = H, R1 = PhCH2O) which gave I (R = H, R1 = OH) on hydrogenolysis. Other N-arylanthranilic acids were prepared by similar Cu- or Cu salt-catalyzed condensations.  
 IT 39189-35-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 39189-35-0 CAPLUS  
 CN Benzoic acid, 2-[[4-(aminosulfonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



L5 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1970:27990 CAPLUS  
 DOCUMENT NUMBER: 72:27990  
 TITLE: Oxidation-reduction indicators for titration in  
 strongly acid media  
 AUTHOR(S): Bondareva, T. N.; Nikurashina, M. L.; Smirnova, O. A.;  
 Frumina, N. S.  
 CORPORATE SOURCE: Ural State Univ., Sverdlovsk, USSR  
 SOURCE: Zhurnal Analiticheskoi Khimii (1969), 24(9),  
 1309-13  
 CODEN: ZAKHA8; ISSN: 0044-4502  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Oxidation-reduction indicators of the diphenylamine class with 2 electrophilic  
 substituents in the mol. were studied. 2-Nitrophenylanthranilic acid (I),  
 4-sulfophenylanthranilic acid (II), and 2,2'-dicarboxy-diphenylamine (III)  
 can be used as indicators during the titration with strong oxidants in a  
 medium of very concentrated H<sub>2</sub>SO<sub>4</sub> and HClO<sub>4</sub>; titration of Fe(II) with  
 Ce(SO<sub>4</sub>)<sub>2</sub>, the  
 titration of Fe(II) with dichromate, titration of oxalates with Ce(IV). The  
 oxidation-reduction potentials of I, II, and III are 0.94, 0.91 and 0.88 V,  
 resp., in 18N H<sub>2</sub>SO<sub>4</sub>. The indicators can be used for the determination of  
 polyethylene glycol and polyethoxyamines in aqueous solns. These indicators  
 can be also used for the determination of organic C in soils. To a 0.1-0.2-g  
 soil sample add some crystals of Ag<sub>2</sub>SO<sub>4</sub>, then 10 ml 0.2N K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 1:1 H<sub>2</sub>SO<sub>4</sub>,  
 boil for 5 min, cool, add 2-3 ml H<sub>2</sub>O and 5 drops of a 0.2% solution of III in  
 a 2% Na<sub>2</sub>CO<sub>3</sub> solution, and after 3-5 min titrate with 0.1N Mohr's salt solution  
 from blue to yellow-green.  
 IT 26119-52-8  
 RL: ANST (Analytical study)  
 (as oxidation-reduction indicator)  
 RN 26119-52-8 CAPLUS  
 CN Benzoic acid, 2-[(4-sulfophenyl)amino]- (9CI) (CA INDEX NAME)



L5 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1965:82557 CAPLUS  
 DOCUMENT NUMBER: 62:82557  
 ORIGINAL REFERENCE NO.: 62:14673d-h, 14674a-h, 14675a-c  
 TITLE: Phenazines. VI. Synthesis of 2-aminophenazine- and  
 2-aminocarboxyphenazinesulfonamides  
 AUTHOR(S): Herbert, R. B.; Holliman, F. G.  
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 LANGUAGE: English  
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 GI For diagram(s), see printed CA Issue.  
 AB cf. CA 60, 6841d, 10678c. Oxidative cyclization of the appropriate  
 aminodiphenylamines, ArAr'NH (I) in boiling PhNO<sub>2</sub> yielded R, R<sub>1</sub>, R<sub>2</sub>  
 -substituted 2-aminophenazines (II). The known 2,4-(O<sub>2</sub>N)2C<sub>6</sub>H<sub>3</sub>NHC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>-

p (500 mg.) hydrogenated 16 hrs. in 50 ml. alc. at 20°/4 atmospheric over 100 mg. PtO<sub>2</sub> and the colorless solution filtered into 50 ml. PhNO<sub>2</sub>, the residue washed with 100 ml. hot PhNO<sub>2</sub> and the combined solns. freed from alc., refluxed 36 hrs. and the solution concentrated yielded 46% II (R = 8-NH<sub>2</sub>, R<sub>1</sub>

= H, R<sub>2</sub> = 2-SO<sub>2</sub>NH<sub>2</sub>) (III). Since the SO<sub>2</sub>NH<sub>2</sub> group in III was in conjugation with N-10, a corresponding compound with N-5 conjugation was synthesized. H<sub>2</sub>O<sub>2</sub> (60 ml., 30%) stirred with 11.5 g. 3,4-Br(H<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NH<sub>2</sub> in 200 ml. AcOH and 4 ml. concentrated H<sub>2</sub>SO<sub>4</sub> and kept 2 hrs. at 70-80° yielded 40% 2,2'-dibromoazoxybenzene, 4,4'-disulfonamide, m. 286° (decomposition) (C<sub>6</sub>H<sub>5</sub>N). The mother liquor evaporated in vacuo and diluted with H<sub>2</sub>O yielded 3,4-Br(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NH<sub>2</sub>, m. 136-8° (PhMe), triturated (3.25 g.) with 1.8 g. p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHAc and 1.5 g. KOAc and the mixture fused 3.5 hrs. at 130-5°, extracted into N NaOH and the decolorized (C) solution acidified with concentrated HCl yielded 48% 4,3-O<sub>2</sub>N(ρ-AcNHC<sub>6</sub>H<sub>4</sub>NH)C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NH<sub>2</sub>, m. 132-4°, hydrolyzed in 2.5N HCl to the corresponding 4,3-O<sub>2</sub>N(ρ-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NH)C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NH<sub>2</sub> (IV), m. 235-6°, hydrogenated to the diamino compound, 4,3-H<sub>2</sub>N(ρ-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NH)C<sub>6</sub>H<sub>3</sub>SO<sub>2</sub>NH<sub>2</sub>, characterized as the diacetyl derivative, m. 140-2°. IV (500 mg.) hydrogenated and the alc. solution filtered into 150 ml. PhNO<sub>2</sub>, combined with alc. washings and the alc. evaporated, the PhNO<sub>2</sub> solution refluxed 24 hrs. and the filtered solution concentrated yielded 44% II (R =

7-NH<sub>2</sub>, R<sub>1</sub> = H, R<sub>2</sub> = 2-SO<sub>2</sub>NH<sub>2</sub>) (V), m. 287-9°. In both above syntheses, small amts. of 2-aminophenazine were isolated in addition to III and V. In contrast, an attempt to synthesize II (R = 3-NH<sub>2</sub>, R<sub>1</sub> = H, R<sub>2</sub> = 2-SO<sub>2</sub>NH<sub>2</sub>) by cyclization of 4,6,3-(H<sub>2</sub>N)2-(PhNH)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>NH<sub>2</sub> was frustrated by elimination of the SO<sub>2</sub>-NH<sub>2</sub> group with formation only of 2-aminophenazine. Na<sub>2</sub>SO<sub>3</sub> (10.7 g.) in 200 ml. H<sub>2</sub>O added in 30 min. with rapid stirring to 20 g. 5,2,4-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>Cl in 400 ml. alc. under reflux and the mixture refluxed 2 hrs. with stirring, the filtered solution evaporated and the residue recrystd. from H<sub>2</sub>O yielded 65% 2,4,5-(O<sub>2</sub>N)2(Na-O<sub>3</sub>S)C<sub>6</sub>H<sub>2</sub>Cl (VI), m. >300°, refluxed (900 mg.) with 300 mg. PhNH<sub>2</sub> and 370 mg. NaOAc in 40 ml. 95% alc. 4 hrs. and the residue on evaporation recrystd. from alc. to give I.2H<sub>2</sub>O [Ar = Ph, Ar' = 2,4,5-(O<sub>2</sub>N)2(NaO<sub>3</sub>S)C<sub>6</sub>H<sub>2</sub>]. 3,4,6-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>Cl, m. 116.5-17.5°, shaken vigorously (510 mg.) 7 min. in 25 ml. aqueous NH<sub>4</sub>OH (d. 0.88) and filtered from 18 mg. 3,4,6-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>NH<sub>2</sub>, m. 175-6°, the orange filtrate evaporated in vacuo and the residue crystallized from alc. yielded 57% 3,4,6-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>NH<sub>2</sub>. The sulfonamide (500 mg.), 400 mg. PhNH<sub>2</sub>, and 230 mg. NaOAc in 15 ml. alc. refluxed 7 hrs. and the filtered dark red solution cooled yielded 52% I [Ar = Ph, Ar' = 4,6,3-(O<sub>2</sub>N)2-(H<sub>2</sub>NO<sub>2</sub>S)C<sub>6</sub>H<sub>2</sub>] (VII), m. 216-18° (alc.). VII hydrogenated and the product acetylated gave I [Ar = Ph, Ar' = 4,6,3-(Ac-NH)2(H<sub>2</sub>NO<sub>2</sub>S)C<sub>6</sub>H<sub>2</sub>], m. 219-19.5°. VII (140 mg.) hydrogenated and the product refluxed in PhNO<sub>2</sub> 24 hrs. and chromatographed on Al<sub>2</sub>O<sub>3</sub>, the column washed with C<sub>6</sub>H<sub>6</sub> and the orange band eluted with 1:9 Me<sub>2</sub>CO-Et<sub>2</sub>O gave 2-aminophenazine. The PhNO<sub>2</sub> oxidative cyclization was also successful in the synthesis of 4 selected representatives of the 42 possible 2-amino-carboxyphenazinesulfonamides. The selection was made on the basis of the suggested positions of the CO<sub>2</sub>H and SONH<sub>2</sub> groups in aeruginosin B which behaves similarly to 2-amino- and 2-aminocarboxyphenazinesulfonamides when heated in dilute acid solution p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub> (1.72 g.), 2.91 g. 2,3,5-Br(O<sub>2</sub>N)2-C<sub>6</sub>H<sub>2</sub>CO<sub>2</sub>H, and 1.64 g. NaOAc refluxed 1 hr. in 30 ml. alc. with stirring and the precipitated yellow

Na

salt taken up in H<sub>2</sub>O, acidified with dilute HCl and the precipitate recrystd. from aqueous alc. yielded 63% I [Ar = 2,4,6-HO<sub>2</sub>C(O<sub>2</sub>N)2C<sub>6</sub>H<sub>2</sub>, Ar' = p-C<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>] (VIII), m. 275-6°, which (500 mg2.) was hydrogenated in 50 ml. absolute

alc. 24 hrs. at 20°/4 atmospheric over 500 mg. PtO<sub>2</sub>, filtered, and the filtrate and alc. washings evaporated (N atmospheric) in vacuo to give the corresponding I [Ar = 2,4,6-HO<sub>2</sub>C(H<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>, Ar' = p-C<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>-NH<sub>2</sub>], decomposing on heating. VIII (500 mg.) hydrogenated and the filtered solution and 150 ml. PhNO<sub>2</sub> washings combined, the alc. evaporated and the mixture refluxed 48 hrs., filtered and the filtrate concentrated in vacuo (0.1 mm.) gave 54% amorphous II (R = 8-NH<sub>2</sub>, R<sub>1</sub> = 6-CO<sub>2</sub>H, R<sub>2</sub> = 2-SO<sub>2</sub>NH<sub>2</sub>), m. >330. A similar synthesis employing o-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub> led to II (R = 7-NH<sub>2</sub>, R<sub>1</sub> = 9-CO<sub>2</sub>H, R<sub>2</sub> = 1-SO<sub>2</sub>NH<sub>2</sub>) (IX) via I [Ar = 2,4,6-HO<sub>2</sub>C(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>, Ar' = 2-H<sub>2</sub>NSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>] (X). NaOAc (2.05 g.), 1.72 g. o-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NH<sub>2</sub>, and 2.91 g. 2,3,5-Br(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>CO<sub>2</sub>H refluxed 12 hrs. in AmOH with stirring and the yellow salt taken up in hot H<sub>2</sub>O, the solution boiled and the cold filtered solution acidified with HCl yielded 40% X, m. 220-2°. X (390 mg.) hydrogenated and the diamino compound oxidatively cyclized 44 hrs. in refluxing PhNO<sub>2</sub> yielded 120 mg. IX, m. >330°. The mother liquors extracted into 2N NaOH and the Et<sub>2</sub>O-washed, decolorized (C), and filtered extract

acidified with AcOH yielded 4% 3-aminophenazine-1-carboxylic acid. II (R = 3-NH<sub>2</sub>, R<sub>1</sub> = 9-CO<sub>2</sub>Me, R<sub>2</sub> = 1-SO<sub>2</sub>-NH<sub>2</sub>) (XI) was prepared from I [Ar = 2-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, Ar' = 4,6,2-(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>] (XII). ClSO<sub>3</sub>H (50 ml.) stirred 3 hrs. at 93° with 10 g. dry 2,3,5-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>3</sub>Na and the cooled mixture poured onto ice yielded 55% 2,3,5-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>Cl, m. 104-6° (ligroine, b. 100-20°), converted by shaking with excess aqueous NH<sub>4</sub>OH to yield 84% 2,3,5-Cl(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>NH<sub>2</sub>, m. 198-209°. The crude sulfonamide (3.9 g.), 1.9 g. o-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>-CO<sub>2</sub>H, and 2.9 g. NaOAc refluxed 4 hrs. in 100 ml. alc. with stirring and the red-orange Na salt taken up in warm H<sub>2</sub>O, acidified with concentrated HCl, and the free acid (2.45 g.) recrystd. from 95% alc. gave XII, m. 287-8°. XII (206 mg.) in 20 ml. alc. hydrogenated 24 hrs. at 20°/4 atmospheric over 206 mg. PtO<sub>2</sub> and filtered, the residue extracted with hot alc. and the combined filtrate and washings evaporated (N atmospheric) in

vacuo gave I [Ar = 2-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, Ar' = 4,6,2-(H<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>] (XIII), m. 233.5-4.5° (H<sub>2</sub>O). XII (1.26 g.) in 30 ml. anhydrous MeOH containing dry HCl refluxed 8 hrs. yielded 75% I [Ar = 2-MeO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>, Ar' = 4,6,2-(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>] (XIV), m. 230.5-2.5°. XIII (100 mg.) in 10 ml. alc. hydrogenated 24 hrs. at 20°/4 atmospheric with 100 mg. PtO<sub>2</sub> and the reduced product acetylated gave I [Ar = 2-MeO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, Ar' = 4,6,2-(AcNH)C<sub>6</sub>H<sub>2</sub>] (XV), m. 232-3° (95% alc.). XIII (500 mg.) hydrogenated and cyclized 65 hrs. in refluxing PhNO<sub>2</sub> gave 26% dark red XI, m. 276-7° (PhNO<sub>2</sub>). Chromatography of the mother liquors on Al<sub>2</sub>O<sub>3</sub> and elution of the C<sub>6</sub>H<sub>6</sub>-washed column with 1:9 EtOH-Me<sub>2</sub>CO gave XI and 3-aminophenazine-1-sulfonamide (XVI). XII (360 mg.) hydrogenated and cyclized 44 hrs. in boiling PhNO<sub>2</sub> gave 124 mg. impure II (R = 3-NH<sub>2</sub>, R<sub>1</sub> = 9-CO<sub>2</sub>H, R<sub>2</sub> = 1-SO<sub>2</sub>NH<sub>2</sub>) (XV), which was also obtained by oxidative cyclization of I [Ar = 2-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, Ar' = 4,6,2-(H<sub>2</sub>N)SO<sub>2</sub>NH<sub>2</sub>] (XVII). The mother liquors chromatographed on Al<sub>2</sub>O<sub>3</sub> and the Et<sub>2</sub>O-washed column eluted with Me<sub>2</sub>CO gave XVI. XI (50.5 mg.) in 5 ml. 2N NaOH kept 30 min. at 100° and diluted to 15 ml., the filtered solution cooled and the pH adjusted to 5 by addition of AcOH yielded 95% XV, m. >330°. Oleum (15 ml., 20%) containing 2,3-Br(O<sub>2</sub>N)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H heated 3 hrs. at 155-60°, the cooled mixture added to a min. of ice, and the hot filtered solution salted out with NaCl gave 4,5,3-Br(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>3</sub>Na (XVIII), m. >300°. Oleum (90 ml., 20%) containing 25 g. o-BrC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H heated 4 hrs. at 100°, cooled and treated below 40° with 25 ml. fuming HNO<sub>3</sub> (d. 1.5), the mixture cautiously warmed to 98° and the temperature maintained 5 hrs., the cooled mixture poured onto ice and kept 16 hrs., filtered and salted out with NaCl yielded 91% XVI, converted by heating 3 hrs. at 96-8° in ClSO<sub>3</sub>H to yield 58% 4,5,3-Br(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>SO<sub>2</sub>Cl, m. 197-9°, stirred (8.8 g.) in 50 ml. aqueous NH<sub>4</sub>OH (d. 0.88) to give

6.6 g. 4,5,3-Br(O2N)(CO2H)C6H2SO2NH2 (XVII), m. 218-21°. XVII (6.5 g.), 3 g. p-H2NC6H4NHAc, and 4.1 g. NaOAc refluxed 4 hrs. in 50 ml. alc. and the residue on evaporation taken up in H2O, the filtered solution acidified with concentrated HCl and the precipitate recrystd. from dilute AcOH yielded

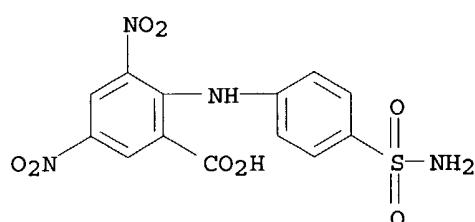
68% I [Ar = 4-AcNHC6H4, Ar' = 2,6,4-HO2C-(O2N)(H2NO2S)C6H2], m. 250-1°, hydrolyzed by refluxing 1 hr. in 2N HCl to give 68% I [Ar = 4-H2NC6H4, Ar' = 2,6,4-(HO2C)(O2N)(H2NO2S)C6H2] (XVIII)-HCl salt. The salt (500 mg.) in 20 ml. MeOH containing dry HCl refluxed 8 hrs. and the MeOH evaporated in vacuo,

the residue taken up in cold HCl and the filtered solution treated with aqueous NaOAc gave 66% I [Ar = 4-H2-NC6H4, Ar' = 2,6,4-(MeO2C)(O2N)(H2NO2S)C6H2] (XIX), m. 193.5-6.5°. Attempted recrystn. of XIX from BuOH gave XVIII, m. 268-70°, converted into the above-mentioned HCl salt. XIX (300 mg.) hydrogenated and the product cyclized by boiling 60 hrs. in PhNO2, the cooled, filtered mixture chromatographed on Al2O3 and the washed (C6H6, Et2O, Me2CO, EtOH, H2O) column eluted with 1% aqueous C5H5N yielded 14% II (R = 8-NH2, R1 = 4-CO2H, R2 = 2-SO2NH2) (XX), m. >330°. Synthesis of XX via I [Ar = 2,4-(O2N)2C6H3, Ar' = 2-HO2CC3H4] (XXI) was attempted. CISO3H (7.5 ml.) added slowly to 10.5 g. dry XXI with effervescence and rise of temperature to 70°, the mixture kept 1 hr. at 110° (oil bath), and the cooled mixture poured onto ice yielded 92% 5,7-dinitroacridone-2-sulfonyl chloride, m. 272-6° (decomposition) (PhMe), converted by addition of concentrated NH4OH to yield 95% 5,7-dinitroacridone-2-sulfonamide, m. >300°. The reactants of the above model compds. II with aqueous acid, together with other evidence led to the given structure for aeruginosin B (XXII), a red crystalline pigment from a strain of *Pseudomonas aeruginosa*.

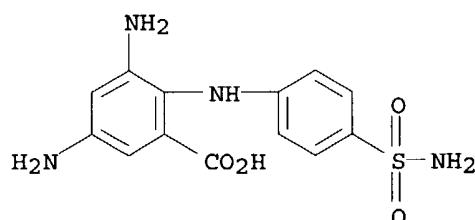
IT 2379-43-3, Anthranilic acid, 3,5-dinitro-N-(p-sulfamoylphenyl)-  
2379-44-4, Benzoic acid, 3,5-diamino-2-(p-sulfamoylanilino)-  
(preparation of)

RN 2379-43-3 CAPLUS

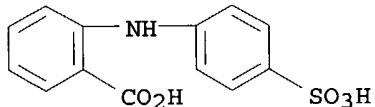
CN Benzoic acid, 2-[[4-(aminosulfonyl)phenyl]amino]-3,5-dinitro- (9CI) (CA INDEX NAME)



RN 2379-44-4 CAPLUS  
CN Benzoic acid, 3,5-diamino-2-[[4-(aminosulfonyl)phenyl]amino]- (9CI) (CA INDEX NAME)



L5 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1955:23706 CAPLUS  
 DOCUMENT NUMBER: 49:23706  
 ORIGINAL REFERENCE NO.: 49:4558f  
 TITLE: New oxidation-reduction indicators. IV.  
 Diphenylamine-4-sulfo-2'-carboxylic acid  
 AUTHOR(S): Cherkasov, V. M.  
 SOURCE: Zhurnal Obshchey Khimii (1953), 23, 201-3  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB See C.A. 48, 2655a.  
 IT 26119-52-8, Anthranilic acid, N-p-sulfophenyl-  
 (and derivs., as oxidation-reduction indicators)  
 RN 26119-52-8 CAPLUS  
 CN Benzoic acid, 2-[(4-sulfophenyl)amino]- (9CI) (CA INDEX NAME)



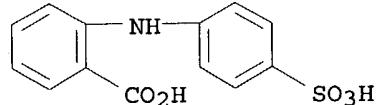
L5 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1954:14610 CAPLUS  
 DOCUMENT NUMBER: 48:14610  
 ORIGINAL REFERENCE NO.: 48:2655a-d  
 TITLE: New oxidation-reduction indicators. IV.  
 Diphenylamine-4-sulfo-2'-carboxylic acid  
 AUTHOR(S): Cherkasov, V. M.  
 CORPORATE SOURCE: N. F. Gamale Epidemiol. and Microbiol. Inst.,  
 Dnepropetrovsk  
 SOURCE: Zhurnal Obshchey Khimii (1953), 23, 197-9  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB cf. C.A. 48, 645c. Heating 11.5 g. Na sulfanilate, 9.5 g.  
 $\text{o-C}_6\text{H}_4\text{CO}_2\text{Na}$ , 0.1 g. powdered Cu, and 0.6 g.  $\text{CuSO}_4$  in sealed tubes  
 with 20 ml.  $\text{H}_2\text{O}$  15 hrs. at 115-20° gave, after filtration,  
 acidification with HCl to Congo red, and extraction of the precipitate with  
 $\text{Et}_2\text{O}$  to  
 remove  $\text{o-C}_6\text{H}_4\text{CO}_2\text{H}$ , 28.8% diphenylamine-4-sulfo-2'-carboxylic  
 acid in the form of the Ba salt, by precipitation of the filtrate with  
 saturated  
 $\text{BaCl}_2$ . The salt,  $(\text{C}_13\text{H}_{10}\text{O}_5\text{NS})_2\text{Ba}$ , (5.2 g.) was heated on steam bath with  
 10 ml.  $\text{H}_2\text{O}$  and 0.5 ml. concentrated  $\text{H}_2\text{SO}_4$ , filtered hot, adjusted to 20 ml.,  
 and  
 treated with 7 ml. HCl (d. 1.19); the product is least soluble in 20% HCl,  
 and reppn. as above gave the pure acid (I), greenish plates, decompose  
 without melting. I with  $\text{BaCO}_3$  yields a water-soluble Ba salt,  $\text{C}_13\text{H}_{10}\text{O}_5\text{NSBa}$ .  
 I (2.93 g.) in 5 ml.  $\text{H}_2\text{O}$  with 0.53 g.  $\text{Na}_2\text{CO}_3$  gave  $\text{C}_13\text{H}_{10}\text{O}_5\text{NSNa} \cdot \text{H}_2\text{O}$ , poorly  
 soluble in  $\text{H}_2\text{O}$ , insol. in  $\text{EtOH}$ . I (2.93 g.) treated in 10 ml.  $\text{H}_2\text{O}$  with 1.06  
 g.  $\text{Na}_2\text{CO}_3$  and 5 ml.  $\text{H}_2\text{O}$ , then evaporated, gave very soluble  $\text{C}_13\text{H}_{10}\text{O}_5\text{NSNa}_2$ . I  
 (1.46 g.) in 15 ml. 10%  $\text{NaOH}$  treated with 5.04 g.  $\text{Me}_2\text{SO}_4$  and acidified  
 after 15 min. gave the mono-Me ester, which ppts. on acidification; it is  
 soluble in  $\text{EtOH}$ . The Ba salt is sparingly soluble in  $\text{H}_2\text{O}$ . The ester decompose

before melting. I (0.001M solution) used as an indicator in titrations with K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and Ce sulfate showed a color change from colorless to yellow-green, finally to pure blue-violet. In 10N H<sub>2</sub>SO<sub>4</sub> the least amount of the oxidizing agent (0.001N) is 2 ml.; the optimum amount is 4 ml. At lower acidity than 10N H<sub>2</sub>SO<sub>4</sub> the color change is delayed. If Fe<sup>++</sup> is present the color change occurs even in 7.5N H<sub>2</sub>SO<sub>4</sub>. The mono-Me ester has similar indicator properties.

IT 26119-52-8, Anthranilic acid, N-p-sulfophenyl-  
(and derivs., as oxidation-reduction indicators)

RN 26119-52-8 CAPLUS

CN Benzoic acid, 2-[(4-sulfophenyl)amino]- (9CI) (CA INDEX NAME)



=> LOG Y  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
52.45	208.08

FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
-6.93	-6.93

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